

Algebra II
Mrs. Britton
Quiz Review: 8.3

Name: Key
 Date: _____

Simplify each rational expression. SHOW WORK!

$$1. \frac{2x}{24x^7} = \frac{\cancel{2}x^{\cancel{1}}}{\cancel{24}x^6} = \boxed{\frac{1}{12x^6}}$$

$$2. \frac{10x+5}{12x+6} = \frac{5(2x+1)}{6(2x+1)}$$

$$\frac{\cancel{5(2x+1)}}{\cancel{6(2x+1)}} = \boxed{\frac{5}{6}}$$

$$3. \frac{x^2-3x-18}{x^2-36} = \frac{(x-6)(x+3)}{(x+6)(x-6)} =$$

$$\frac{\cancel{(x-6)}(x+3)}{(x+6)\cancel{(x-6)}} = \boxed{\frac{x+3}{x+6}}$$

$$4. \frac{x^2+11x+24}{x^2+2x-48} = \frac{(x+3)(x+8)}{(x+8)(x-6)}$$

$$\frac{(x+3)\cancel{(x+8)}}{\cancel{(x+8)}(x-6)} = \boxed{\frac{x+3}{x-6}}$$

Multiply or Divide the following.

$$5. \frac{x^2+2x-8}{x^2-3x+2} \cdot \frac{x^2+x-2}{x^2-6x-16}$$

$$\frac{(x+4)(x-2)}{(x-2)(x-1)} \cdot \frac{(x+2)(x-1)}{(x-8)(x+2)}$$

$$\frac{(x+4)\cancel{(x-2)}}{\cancel{(x-2)}(x-1)} \cdot \frac{\cancel{(x+2)}(x-1)}{(x-8)\cancel{(x+2)}} = \boxed{\frac{x+4}{x-8}}$$

$$6. \frac{x-4}{x^2+4x-32} \cdot \frac{x^2+5x-24}{x^2+3x-18}$$

$$\frac{x-4}{(x+8)(x-4)} \cdot \frac{(x+8)(x-3)}{(x+6)(x-3)}$$

$$\frac{\cancel{x-4}}{(x+8)\cancel{(x-4)}} \cdot \frac{\cancel{(x+8)}(x-3)}{(x+6)\cancel{(x-3)}} = \boxed{\frac{1}{x+6}}$$

$$7. \frac{4x-8}{x^2-x-6} \div \frac{x^2+x-6}{x^2-9}$$

$$\frac{4x-8}{x^2-x-6} \cdot \frac{x^2-9}{x^2+x-6}$$

$$\frac{4(x-2)}{(x-3)(x+2)} \cdot \frac{(x-3)(x+3)}{(x+3)(x-2)} = \boxed{\frac{4}{x+2}}$$

$$8. \frac{x^2+10x-11}{x^2+6x+5} \div \frac{x^2+9x-22}{x^2+3x-10}$$

$$\frac{x^2+10x-11}{x^2+6x+5} \cdot \frac{x^2+3x-10}{x^2+9x-22}$$

$$\frac{(x+11)(x-1)}{(x+5)(x+1)} \cdot \frac{(x+5)(x-2)}{(x+11)(x-2)} = \boxed{\frac{x-1}{x+1}}$$